AMENDMENTS TO THE ABSTRACT:

Please cancel the original Abstract and substitute the new Abstract attached as a separate

sheet.

ABSTRACT

A path through a data network is calculated that accounts for priority levels of already-established paths. Potential new paths are determined taking into account priority level information associated with data network links. Of the determined paths, the path selected is preferably one having the least pre-emptive effect on lower priority traffic. The bandwidth reservation information for each data network link is determined along with the maximum bandwidth of each link and the available bandwidth at each priority level. Links with insufficient resources are eliminated from consideration. For the remaining candidate paths, determinations for each link are made: which lower priority levels will be affected by the setup of the new path, how much reserved bandwidth will be pre-empted at each priority level, and how much free bandwidth is available at the lowest priority level. A path is selected that reduces or preferably minimizes some aspect of pre-emption.